

C. Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in this application:

Listing of Claims

Claims 1-22 (cancelled).

Claim 23 (new): A method for determining a parameter of interest of a subsurface region of earth formations comprising:

- (a) obtaining seismic survey information about the subsurface region;
- (b) identifying a plurality of interpreted seismic horizons of interest from the obtained survey information;
- (c) obtaining estimated seismic velocities corresponding to at least one interval between at least one pair of said plurality of seismic horizons, wherein the obtained seismic velocities are selected from the group consisting of:
 - (i) S-wave velocity data generated from normal moveout (NMO) velocity analysis,
 - (ii) P-wave velocity data from VSP look-ahead inversion, and
 - (iii) S-wave velocity data from VSP look-ahead inversion;
- (d) calibrating the estimated seismic velocities to the parameter of interest;
and
- (e) using the results of said calibration and the obtained seismic velocities to obtain the parameter of interest at any location within the seismic survey.

Claim 24 (new): The method of claim 23 wherein the obtained seismic velocities are S-wave velocity data generated from normal moveout (NMO) velocity analysis.

Claim 25 (new): The method of claim 23 wherein the obtained seismic velocities are P-wave velocity data from VSP look-ahead inversion.

Claim 26 (new): The method of claim 23 wherein the obtained seismic velocities are S-wave velocity data from VSP look-ahead inversion.